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## *Notice of the Observatory of the Collegio Romano.*

The Council have been favoured, by the courtesy of Mr. G. Rennie, with a communication of some particulars of the present state of the Observatory at Rome, which he obtained from Professor Secchi during a recent visit to that city. The original account in Italian has been translated by the ladies of Mr. Rennie's family, and is accompanied by two plans, one a horizontal, and the other a vertical section of the building through the observing-rooms, from which a very good idea of the establishment may be procured. The account, as transmitted to the Council, being too long for insertion in the *Monthly Notices*, has been condensed into the following form.

The Jesuit College is situated immediately at the east extremity of the church of St. Ignatius. In the original design of this church, it was intended that a cupola of 58½ feet (Engl.) in diameter should crown the east end of the church; and pilasters of solid masonry, and of a section of about 520 square feet, were introduced into the structure for its support. This cupola, having never been built, owing to change of plans consequent on the premature death of Cardinal Ludovici, advantage has been taken of the solid foundation intended for it, to erect thereon, at about the level of the roof, piers and observing-rooms for the astronomical instruments, possessing all that is necessary, in the way of elevation, horizon, and convenience of access from the College.

The principal observing-rooms are the meridian circle-room and the dome for the large equatoreal. The former is of elliptie section, measuring about 23 feet in length, north and south, by 16 in width, and contains three fixed instruments and two clocks, one going in sidereal, the other mean time. The three instruments mentioned are placed on three piers, ranged north and south, under the roof-opening, which is common to them all. Near to the south shutter is a transit instrument of 4 feet focal length, by Reichenbach, mounted on a cast-iron stand, bedded in masonry; and so contrived that the pier may be turned round through 90 degrees, if desired, for observation in the prime vertical, without losing, after refixing, its character of a stable support. In the centre is placed the meridian-circle, by Ertel, for a description of which the reader is referred to the Memoirs of the Observatory. The focal length of the telescope is 5 feet, and the diameter of the circle 27½ inches. Since the former description was written, some additions have been made to the micrometrical parts of the wire-frames; and provision has been made for illuminating the wires in a dark field at night. The graduated circle and the reading apparatus is cased in with a covering of bright metal to ensure equable and slow distribution of varied temperature. In this case are four small shutters in the direction of the illuminating rays, which are opened in succession when a reading has to be

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taken, and are then closed again. The additional precaution has also been taken of so distributing the four windows, that the light and heat coming from without may fall about equally on all parts of the instrument. The third instrument, occupying the north end of the room, is a collimating telescope for the Ertel circle, which is partly used for checking the position of the meridian instrument at times when observations of the polar stars have not been obtained. As the stability of the collimator, however, in itself could no more be relied on than that of the meridian instrument, there is joined to the collimator a second telescope, directed constantly on an object-glass, and mark distant (northwards, probably) about 550 yards. It is assumed that the collimator and its companion move together; and that the changes of position of the one may be attributed to the other.

Professor Secchi remarks, that in a recent examination the iron trough used for the mercurial horizon was found to be strongly magnetic, and that, in consequence, he thinks, the glass troughs, formerly in use, to be preferable.

The equatoreal room is circular, and 25 feet in diameter, surmounted by a movable roof, in the form of a cylinder, covered in with a segment of a sphere. The construction of this dome is described at much length; but, possessing no peculiar feature of novelty, may be omitted. Its shutters are conveniently opened by winch-work and chains, and closed again by merely reversing the movement. An excellent horizon for the equatoreal is obtained by raising the room, so that the centre of motion of the telescope is above the level of the roof of the meridian room, while the meridian of the latter is not interfered with by the dome in consequence of the two not being quite north and south. The equatoreal, which is the first and largest of its kind in Italy, is precisely similar to the one at Pulkowa, excepting in size. The mounting appears to be very similar to that of the Oxford heliometer in this country, every important bearing being provided with friction-wheels and counterpoises, after the German fashion. The whole is carried round by a driving-clock, of the excellent performance of which Professor Secchi speaks in terms of great praise. The rate of the regulating part of this movement is controlled by the friction of two small brass balls against the sides of a conical box, in a way which many readers of the *Monthly Notices* have probably themselves witnessed. The object-glass of the equatoreal has an effective aperture of 9 French inches, and is not found to be in any degree improved in performance by the application of diaphragms to diminish the full opening. The focal length is 14·2 English feet. The telescope is provided with various positive and negative eyepieces, ranging from about 100 to 1000 in magnifying power. In the observation of very faint objects Professor Secchi has not been entirely satisfied with the means for illuminating the wire-frame, the observer always, more or less, finding himself annoyed by stray light about the room; and, after various experiments, expresses his intention of applying internal

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